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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,832	10/23/2003	Frank Frederiksen	60091.00241	5417
32294 7590 01/11/2008 SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			EXAMINER MAIS, MARK A	
			ART UNIT 2619	PAPER NUMBER
			MAIL DATE 01/11/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/690,832	Applicant(s) FREDERIKSEN ET AL.	
	Examiner Mark A. Mais	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/23/2004; 3/8/2007</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

2. The information disclosure statements (IDSs) were filed on March 23, 2004 and March 8, 2007. The submission is in compliance with the provisions of 37 C.F.R. 1.97. According, the examiner considered the IDSs.

Claim Objections

3. Claim 19 is objected to because of the following informalities: it uses the word "Channelchannel." The examiner interprets this to means "channel." Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hwang et al. (USP 7,047,473).

6. With respect to claim 1, Hwang et al. discloses a method of controlling link adaptation and packet scheduling in a High Speed Downlink Packet Access radio system [HSPDA, col. 2, lines 35-46], the method comprising

providing feedback information from user equipment to a base station [TFRI and HARQ, col. 3, lines 39-45] over a control channel [HS-SCCH, col. 3, lines 36-39];

calculating a quality estimate [calculates quality estimate by using ACK or NAK as well as comparing reception quality to goal quality, col. 9, lines 51-54] related to the feedback information by the base station [the base station can use NAK with additional control information/bits/codewords, col. 9, line 51 to col. 10, line 34; col. 11, line 35 to col. 12, line 33]; and

executing link adaptation [if channel status is good, using 16 QAM/64 QAM, else using QPSK, col. 2, lines 49-52] and packet scheduling [sending stored packets based on HARQ, col. 2, lines 53-62] based on the calculated quality estimate by the base station .

7. With respect to claim 12, Hwang et al. discloses a High Speed Downlink Packet Access **[HSPDA, col. 2, lines 35-46]** base station communicating over a control channel with one or more user equipment units, the base station comprising:

receiving means for receiving feedback information from the user equipment **[HS-SCCH, col. 3, lines 36-39]**;

calculating means for calculating a quality estimate related to the feedback information **[calculates quality estimate by using ACK or NAK as well as comparing reception quality to goal quality, col. 9, lines 51-54]**; and

executing means for executing link adaptation **[if channel status is good, using 16 QAM/64 QAM, else using QPSK, col. 2, lines 49-52]** and packet scheduling **[sending stored packets based on HARQ, col. 2, lines 53-62]** based on the calculated quality estimate.

8. With respect to claims 2 and 16, Hwang et al. discloses

informing a link adaptation unit **[if channel status is good, using 16 QAM/64 QAM, else using QPSK, col. 2, lines 49-52]** and a packet scheduler unit **[sending stored packets based on HARQ, col. 2, lines 53-62]** about the calculated quality estimate **[calculates quality estimate by using ACK or NAK as well as comparing reception quality to goal quality, col. 9, lines 51-54]** and

wherein the step of executing comprises executing the link adaptation and packet scheduling by the link adaptation unit and the packet scheduler unit of the base station **[this is inherent]**.

9. With respect to claims 3 and 13, Hwang et al. discloses that the step of calculating comprises calculating the quality estimate related to the feedback information comprising at least one of hybrid automatic repeat request information bits and channel quality indicator information bits **[the base station can use NAK with additional control information/bits/codewords, col. 9, line 51 to col. 10, line 34; col. 11, line 35 to col. 12, line 33].**

10. With respect to claim 4, Hwang et al. discloses that the step of calculating the quality estimate comprises calculating estimates of the hybrid automatic repeat request information and channel quality indicator information in order to make faster link adaptation and packet scheduling decisions **[calculates quality estimate by using ACK or NAK as well as comparing reception quality to goal quality, col. 9, lines 51-54].**

11. With respect to claims 6 and 15, Hwang et al. discloses that the step of calculating estimates of the channel quality indicator estimate comprises:

calculating a set of legal code words corresponding to different channel quality values, and using a difference between received channel quality indicator information and the set of legal code words to calculate the channel quality indicator estimate **[the base station can use NAK with additional control information/bits/codewords, col. 9, line 51 to col. 10, line 34; col. 11, line 35 to col. 12, line 33; for example: time delay, increase/decrease transmission power, increase/decrease multicode number].**

12. With respect to claims 7 and 17, Hwang et al. discloses that the step of providing comprises providing the feedback information over the control channel comprising a High Speed - Dedicated Physical Control Channel **[HS-SCCH, col. 3, lines 36-39; interpreted as dedicated when performing HARQ signaling]**.

13. With respect to claims 8 and 18, Hwang et al. discloses that the providing step comprises providing the feedback information over the control channel comprising a Dedicated Physical Control Channel **[HS-SCCH, col. 3, lines 36-39; interpreted as dedicated when performing HARQ signaling]**.

14. With respect to claim 9, Hwang et al. discloses executing the link adaptation and packet scheduling when the calculated quality estimate shows high reliability **[if channel status is good, using 16 QAM/64 QAM, else using QPSK, col. 2, lines 49-52; calculates quality estimate by using ACK or NAK as well as comparing reception quality to goal quality, col. 9, lines 51-54; it is inherent that link adaptation (64 QAM) and packet scheduling (based on ACK) are performed when signal quality is good]**.

15. With respect to claims 10 and 19, Hwang et al. discloses
measuring a second piece of feedback information from associated Dedicated Physical Channel **[HS-SCCH, col. 3, lines 36-39; interpreted as dedicated when performing HARQ signaling]**; and weighting a use of a channel quality indicator compared to the second piece of feedback information from the associated Dedicated Physical Channel **[the base station can use**

NAK with additional control information/bits/codewords (this is interpreted as a second piece of feedback), col. 9, line 51 to col. 10, line 34; col. 11, line 35 to col. 12, line 33; for example: time delay, increase/decrease transmission power, increase/decrease multicode number; weighting is performed between NAK and NAK+information/bits/codewords].

16. With respect to claims 11 and 20, Hwang et al. discloses aborting reception of the feedback information, when the calculated quality estimate shows high reliability [if channel status is good, using 16 QAM/64 QAM, else using QPSK, col. 2, lines 49-52; calculates quality estimate by using ACK or NAK as well as comparing reception quality to goal quality, col. 9, lines 51-54; it is inherent that link adaptation (64 QAM) and packet scheduling (based on ACK) are performed when signal quality is good; thus the receiver has no need to require feedback information on that particular transmission and can then discard that information (this is interpreted as aborting a HARQ signal on an already-acknowledged transmission)].

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al.

19. Hwang et al. discloses that the base station can use NAK with additional control information/bits/codewords [col. 9, line 51 to col. 10, line 34; col. 11, line 35 to col. 12, line 33]. Hwang et al. does not specifically disclose averaging the received HARQ bits. Averaging quality and power control information is well known to those in the art. Moreover, the invention, as claimed, fails to meaningfully make a distinction about the averaged information [e.g., with respect to link adaptation or packet scheduling]. Applicants have not disclosed that averaging the HARQ bits solves any stated problem or is for any particular purpose. It appears that the performance of the HSPDA system would result equally well with the HARQ scheme disclosed in Hwang et al. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hwang et al. to use the same HARQ scheme with additional control information/bits/codewords because such modifications are considered a mere design choice consideration, which fails to patentably distinguish over the prior art of Hwang et al. In addition, averaging the HARQ bits is interpreted as an optimum value for a known process. A discovery of an optimum value for a known process is obvious engineering. See In re Aller, 105 USPQ 233 (CCPA 1955).

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Shinoi et al. (US Patent Publication 2006/0056501), Line quality report accuracy measurement device and accuracy measurement method.

(b) Kwan et al. (USP 7,206,332), Optimization of MCS and multi-code with TFCI signaling.


21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is 572-272-3138. The examiner can normally be reached on M-Th 5am-4pm.

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


December 11, 2007


11/7/08
WING CHAN
SUPERVISORY PATENT EXAMINER